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A comparative study of pre-service teachers' teaching efficacy beliefs before and after work-integrated learning: Part two

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Abstract

The study, which is grounded in Bandura's concept of self-efficacy, assessed the teaching efficacy beliefs of student teachers before and after completing six months of work-integrated learning. This was necessitated by research which shows that self-efficacy is an important aspect which influences a teacher's ability to teach as well as the effectiveness of that teaching. The first part of this study measured the perceived teaching efficacy of third-year teacher education students in three construct dimensions: student engagement, instructional strategies and classroom management. This part of the investigation was performed before the participants attended their work-integrated learning at secondary schools in South Africa. The sample consisted of 136 students, with 70 males and 66 females, respectively. A questionnaire was used to collect data from the student teachers. The results showed that at the end of their third year of study, the student teachers responded with largely positive teaching efficacy beliefs with regard to their future occupation. The participants' perceptions of their teaching efficacy were however primarily based on and influenced by their observations of other teachers and lecturers. The theoretical grounding that they received from the institution at which they studied also contributed to their perceptions of their teaching efficacy. The second part of the study engaged the same group of students, then in their fourth year, but after having completed six months of work-integrated learning at South African secondary schools. A similar questionnaire was administered in order to determine the participants' perceptions of work-integrated learning itself as well as the extent to which work-integrated learning had influenced their teaching efficacy beliefs. Intricate changes in the perceived teaching

efficacy of the participants had indeed taken place and are analysed and discussed in this article.

Keywords: teaching efficacy beliefs, work-integrated learning, self-efficacy, perceived teaching efficacy, student engagement, instructional strategies, classroom management

Introduction

A growing number of educational researchers are interested in relationships between teacher efficacy and other educational variables. For example, teachers' efficacy judgements have been correlated with decreased burnout (Brouwers and Tomic, 2000), increased job satisfaction (Caprara et al., 2003) and commitment to teaching (Coladarci, 1992). Ross (1998) reviewed 88 teacher efficacy studies and suggested that teachers with higher levels of efficacy are more likely to learn and use new approaches and strategies for teaching; use management techniques that enhance student autonomy and diminish student control; provide special assistance to low achieving students; build students' self-perceptions of their academic skills; set attainable goals, and persist in the face of student failure. These studies show that there is a relationship between teaching efficacy and student academic performance.

Self-efficacy refers to the beliefs about one's capabilities to learn or perform behaviours at designated levels (Bandura, 1997) and is said to have a measure of control over an individual's thoughts, feelings and actions. The beliefs that individuals hold about their abilities and outcome of their efforts influence in great ways how they will behave. It is the realization of this relationship between individual beliefs and subsequent behaviours that prompted researchers' interest in self-efficacy. Self-efficacy has been applied in educational settings. The influence that self-efficacy has on motivation, learning and academic achievement has been investigated and reported (Pajares, 1996; Schunk, 1995). Self-efficacy has also been reported for individual subjects such as mathematics (Pajares and Miller, 1994).

Researchers have shown increasing interest in the teaching efficacy of prospective teachers. Student teaching or Teaching Practice is generally considered the most beneficial component of preparation by prospective and practising teachers as well as teacher educators (Borko and Mayfield, 1995). It is during Teaching Practice that students develop a positive or a negative attitude towards teaching as a career, indicating that Teaching Practice can have both positive and negative influences.

Theoretical framework

The theoretical framework for this study originates from Bandura's theory of social learning. According to Bandura in Gist (1987), 'self-efficacy, a key component in Bandura's Social Learning Theory, refers to one's belief in one's capability to perform a specific task.'

Perceived self-efficacy is concerned with people's beliefs in their capability to produce given attainments (Bandura, 2006: 307). It is a judgement of capability to execute given types of performances. Perceived self-efficacy plays a key role in human functioning because it affects behaviour not only directly, but by its impact on other determinants such as goals and aspirations, outcome expectations and perception of impediments and opportunities in the social environment. Efficacy beliefs influence whether people choose to pursue the challenges and goals they set for themselves and their commitment to them, how much effort they put forth in given endeavours, the outcomes they expect their efforts to produce, how long they persevere in the face of obstacles, their resilience to adversity, the quality of their emotional life and how much stress and depression they experience in coping with taxing environmental demands, and the life choices they make and the accomplishments they realize (Bandura, 2006: 309).

Self-efficacy arises from the gradual acquisition of complex cognitive, social, linguistic and or physical skills through experience. Individuals appear to weigh, integrate and evaluate information about their capabilities. They then regulate their choices and efforts accordingly (Gist, 1987).

Bandura (in Pajares, 2002) proposed a view of human functioning that emphasized the role of self-referent beliefs. In this socio-cognitive perspective, individuals are viewed as proactive and self-regulating rather than reactive and controlled by biological forces. Also in this view, individuals are understood to possess self-belief that enables them to exercise a measure of control over their thoughts, feelings and actions. On the whole, Bandura painted a portrait of human behaviour and motivation in which beliefs that people have about their capabilities are critical elements. In fact, according to Bandura, how people behave can often be better predicted by the beliefs, than by what they are actually capable of accomplishing, for these self-perceptions help determine what individuals do with the knowledge and skills they have.

Literature review

The literature review considers and describes different sources of efficacy beliefs. General sources of efficacy beliefs are mentioned in an introductory manner, while more specific sources of efficacy beliefs for prospective teachers, including teaching experience, the role of context, and the relationship with the mentor, classroom management and feelings of readiness to teach, are subsequently addressed.

General sources of efficacy beliefs

Research shows that self-efficacy stems from four sources: mastery experience, vicarious experience, verbal persuasion and physiological states (Bandura, 1993). The following explanations of these sources are taken from Pajares (2002).

Mastery experience refers to how one interprets the results of previous performance, and this has been found to be the most influential source. Individuals engage in tasks and activities, interpret the results of their actions, use the interpretations to develop beliefs about their capability to engage in subsequent tasks or activities, and act in concert with the beliefs created. Outcomes interpreted as successful raise self-efficacy; those interpreted as failures, lower it. In addition to interpreting the results of their actions, people form their self-efficacy beliefs through the vicarious experience of observing others perform tasks. This source of information is weaker than mastery experience in helping create self-efficacy beliefs, but when people are uncertain about their own capabilities or when they have limited prior experience, they become more sensitive to it. The effects of modelling are particularly useful in such contexts.

Individuals also create and develop self-efficacy beliefs as a result of social persuasions they receive from others. These persuasions can involve exposures to the verbal judgements that others provide. Persuaders play an important part in the development of an individual's self-beliefs. Effective persuaders must cultivate people's beliefs in their capabilities while at the same time ensuring that the envisaged success is attainable.

Physiological states, referred to as somatic and emotional states, such as anxiety, stress and mood also provide information about efficacy beliefs. People can gauge their degree of confidence by the emotional state they experience as they contemplate an action. Strong emotional reactions to a task provide clues about

the anticipated success or failure of the outcome. When they experience negative thoughts and fears about their capabilities, those affective reactions can themselves lower self-efficacy perceptions and trigger additional stress and agitation that help ensure the inadequate performance they fear.

The sources of self-efficacy information are not directly translated into judgements of competence. Individuals interpret the results of events, and these interpretations provide the information on which judgements are based. How people select information, integrate it, interpret it and make recollections, influence judgements of self-efficacy.

Sources of efficacy beliefs for prospective teachers

The development of teacher efficacy beliefs among prospective teachers has generated a great deal of research interest because once established, these beliefs appear to be resistant to change. Various sources of self-efficacy for prospective teachers have also been identified. Woolfolk-Hoy and Burke-Spero (2005) argue that mastery experiences during student teaching and the first years of teaching influence the development of teacher efficacy. Furthermore, they argue that field experiences give student teachers opportunities to evaluate their capabilities. Observations of other teachers might serve as 'vicarious experience,' which is another effective tool for promoting a sense of efficacy. Previously, Bandura (1997) had identified the importance of feedback and support from environment in the cultivation of efficacy.

In their longitudinal case study, Mulholland and Wallace (2001) found that successful mastery experiences and verbal persuasions were the primary sources of information for building teachers' efficacy. During both the pre-service and in-service teaching years, previous experience with an instructional activity, knowing students' characteristics, preference for manageable activities, and support from supervisors in the early years of teaching, all helped teachers experience mastery.

Teaching experience and efficacy

Student teaching is generally considered the most beneficial component of preparation by prospective and practising teachers as well as teacher educators (Borko and Mayfield, 1995). It is during student teaching or Teaching Practice that students develop a positive or a negative attitude towards teaching as a career. The experiences of prospective teachers during Teaching Practice have been found to have both positive and negative influences. Poorly chosen

placements result in feelings of inadequacy, low teacher efficacy and an unfavourable attitude towards teaching (Fallin and Royse, 2000), whereas extensive and well-planned field experiences can help prospective teachers develop confidence, self-esteem and enhanced awareness of the profession.

There are, however, mixed results from the studies on the relationship between teaching experience and self-efficacy. In the case of science teaching, efficacy was found to increase with experience as the full-time teacher grew better in managing learner behaviours and typical science inquiry activities. Spector (2004) found that personal efficacy beliefs among undergraduate pre-service teachers increased linearly over a four year teacher education programme, culminating in their first year formal classroom teaching. Spector also discovered that general efficacy beliefs increased linearly for the initial three years, but declined subsequently after teachers started formal teaching. A similar trend of developmental changes of personal and general efficacy beliefs were also reported in other studies (Dembo and Gibson, 1985; Woolfolk and Hoy, 1990).

Some quantitative studies found very little correlation between experience and teaching efficacy (Cantrell, Yound and Moore, 2003; Plourde, 2002; Soodak and Podell, 1996), while others found that teacher efficacy decreased with time (Ghaith and Yaghi, 1997). Woolfolk-Hoy and Burke-Spero (2005) found that efficacy increased during teacher preparation and student teaching, but decreased during the first year of teaching. With experience, some teachers may grow to believe that student learning is due to factors beyond their control (Ghaith and Yaghi, 1997).

The role of context in teaching efficacy

Labone (2004) has noted that much research on teachers' sense of efficacy lacks a consideration of context. Ashton and Webb (1986) asserts that a teacher education programme that aims at developing teacher efficacy beliefs should make an effort to develop teachers that are highly motivated and have confidence for effective classroom performance. Teacher training programmes which are designed to foster teaching efficacy beliefs must include exposure to authentic as well as context-based teaching experience and situations so as to enable the teacher trainees to develop practical skills, human relationships and group rapport, all of which are essential elements of teaching efficacy, teaching confidence and teaching motivation. Tschannen-Moran, Woolfolk-Hoy and Hoy (1998) concurs with Ashton in arguing that teacher training programmes need to give pre-service teachers more opportunities to conduct Teaching Practice, that

includes instructing and managing students in a variety of contexts, as well as challenges so as to provide pre-service teachers with the necessary authentic teaching experience and skills.

Consistent with Social Cognitive theory and the teacher efficacy model proposed by Tschannen-Moran et al. (1998), social and environmental contexts play a major role in the teacher's analysis of the teaching task. Declines in efficacy within the first year of teaching have been attributed, in part, to the withdrawal of the social support provided by the university when practice teaching ends and the real teaching begins (Cantrell et al., 2003; Woolfolk-Hoy and Burke-Spero, 2005).

The relationship with the mentor

A mentor–mentee relationship is crucial during Teaching Practice. A mentor–mentee relationship with guidance from an experienced teacher should help to promote positive teaching efficacy beliefs among prospective teachers. Likewise, encouraging and supportive comments from experienced teachers will have a positive and significant effect on the development of efficacy. In addition, a good mentor–mentee structure could also provide prospective teachers more opportunities to observe and learn (vicarious experience) and to compare teaching strategies of experienced teachers so that a realistic standard of achievement could be developed. Clifford and Green (2004) view a mentor–mentee relationship as a significant factor in pre-service teacher education. A positive rapport of a good mentor–mentee relationship can enhance pre-service teachers' development of teaching competence and self-efficacy beliefs.

To strengthen the argument further, Li and Zhang (2000) determined that pre-service teachers who perceived their mentors to be highly efficacious had significantly higher general teaching efficacy than their counterparts. The nature of the association between the mentor and the mentee is therefore about building relationships. To this end, Vygotsky's mediated learning serves as a developmental framework for mentor–mentee relationships, mentee teacher efficacy levels, pre-service teachers' self-efficacy beliefs, the roles of mentors, and the empathy element as it relates to relationship building.

Teaching efficacy and classroom management

Pre-service teachers with low senses of teacher efficacy beliefs are more likely to favour a firm and regimental style of classroom control and management (Saklofske et al., 2001), while those with high scores on both the general and

personal teaching efficacy beliefs are more humanistic in their approach to classroom management. Furthermore, teacher trainees with higher personal teaching efficacy beliefs were rated higher on their teaching performance, classroom control, and questioning techniques by their supervisors.

Feelings of readiness to teach

Housego (2002) argues that one of the most important prerequisites of successful teaching is confidence in one's own abilities and competence to teach. Teachers' acquisition of confidence to teach indicates that the teacher has achieved the readiness to teach and a high level of personal teaching efficacy belief. Hence teacher education should present training programmes which are designed to enhance and foster pre-service teachers' sense of teaching efficacy beliefs.

The highlighted literature has provided the theoretical framework on which to base the study. The development of self-efficacy of prospective teachers is influenced by many factors of which mastery learning and vicarious experience are but two. The positive and negative influences of self-efficacy on prospective teachers have been found to be context specific. It is against this background that the study sought to determine the self-efficacy beliefs of prospective teachers, before and after work-integrated-learning and studying in the School of Teacher Education at a University of Technology, with the aim of also determining the predictors of their teaching efficacy.

Method and data analysis

This study applied a descriptive survey research design, using a pre-test and a post-test before and after six months of work-integrated learning. The participants in the study were B.Ed (FET) students in the School of Teacher Education at a University of Technology in South Africa. Students from all five B.Ed (FET) programmes offered by the School of Teacher Education participated in the study. Efficacy beliefs of these pre-service teachers were examined through a survey instrument administered firstly at the end of the first semester of the third year of study in 2010 and again at the end of the first semester of the fourth year of study in 2011. The 2010 participants consisted of all B.Ed (FET) third-year students offering Education III, whereas the 2011 participants consisted of all those students from the 2010-group who completed six months of work-integrated learning during the first semester. No further criteria were used to select the participants.

A similar study was conducted with a pilot group during 2009 and 2010 (Matoti, Junqueira and Odora, 2011). The follow-up study, on which we are now reporting, was undertaken to see whether or not the results of the pilot group would be consistent with those of a follow-up study. It was also done to strengthen the reliability of the results.

A questionnaire was used as the instrument to collect data from the participants. The TSES included 24 items on a 5-point scale yielding three subscales: Efficacy for Classroom Management, Efficacy for Instructional Strategies, and Efficacy for Student Engagement. The questionnaires were administered to the students during class time to optimize participation. It was emphasized, however, that participation was voluntary. The quantitative data obtained from the questionnaires were coded and analysed by the researchers. Means, frequencies and standard deviations were calculated and paired t-tests were used to determine whether differences were statistically significant. The information was then presented in tables from which written interpretations were made.

Results and discussion

This section of the article is divided into two parts. The first part reports on the biographical data of the participants, both before and after work-integrated learning, with respect to gender distribution and the distribution of participants within the five B.Ed programmes. The second part of the article reports on the findings obtained from the answers of the participants to the statements in the questionnaires on their teaching efficacy beliefs, both before and after work-integrated learning.

Biographical data

Descriptive statistics provided a sample profile and summarized variables for both groups of participants, before and after work-integrated-learning (WIL).

A good distribution of male and female participants was obtained before WIL with close to 50% making up each group. After WIL the distribution of male and female participants was relatively even once again, with both groups within a 5% range of 50%. One participant, however, failed to indicate his/her gender.

The distribution of participants per programme before WIL was not even with nearly half of them in the Natural Sciences programme and nearly a third of the participants in the Economic and Management Sciences programme, while the Technology, Languages and Computer Sciences programmes together made up the other 26% of participants. This distribution is due to the number of students

Table 1: Gender of the participants.

Gender	Before WIL (N = 136)		After WIL (N = 109)	
	Frequency	%	Frequency	%
Male	70	51.5	58	53.2
Female	66	48.5	50	45.9
No response	0	0	1	0.9
Total	136	100	109	100

Table 2a: Distribution of participants per programme before WIL (N = 136).

Programme	Male	Female	Total	%
Natural Sciences (NS)	36	25	61	44.9
Economic and Management Sciences (EMS)	15	24	39	28.7
Technology	13	1	14	10.3
Languages	1	11	12	8.8
Computer Science	5	5	10	7.3
Total	70	66	136	100

Table 2b: Distribution of participants per programme after WIL (N = 109).

Programme	Male	Female	No response	Total	%
Natural Sciences (NS)	31	20	1	52	47.7
Economic and Management Sciences (EMS)	11	15	0	26	23.9
Technology	11	2	0	13	11.9
Languages	2	12	0	14	12.8
Computer Science	3	1	0	4	3.7
Total	58	50	1	109	100

who registered and which could be accommodated in the different programmes in the School of Teacher Education. Nevertheless, it does not influence the validity of the data as no comparison between the participants in the different programmes was made.

The distribution of participants between the programmes after WIL was very similar to the distribution before WIL. The Natural Sciences programme occupied 48% of the group, the EMS programme nearly 24% and the Technology, Languages and Computer Science programmes together the remaining 28% of the group. Once again no comparison between the participants in the different programmes was made. So, the validity of the data was not influenced by the number of participants per programme. It was noted that the participant who did not indicate his/her gender, was from the Natural Sciences programme.

Data on teaching efficacy beliefs

Table 3 provides data on the general teaching efficacy beliefs of prospective teachers before and after doing WIL for six months at senior secondary schools in the Free State, South Africa. Participants were requested to indicate their opinion on how they could successfully deal with teaching situations described by means of questionnaire statements and indicated in **Table 3** as Q1 to Q24. A scale ranging from 1 to 5 was provided with 1 representing 'Nothing', 2 representing 'Very little', 3 representing 'Some Influence', 4 representing 'Quite a Bit' and 5 representing 'A Great Deal'.

On the whole, it seemed as if the teacher trainees, even before doing any WIL, felt that they could have a very positive influence on the learners' learning as the average of the means of all the questions before WIL was 4.162 out of a possible 5. They were therefore 83.24% certain that they could positively influence their learners. The question, in which the participants scored highest, was question four on motivation. It read: How much can you do to motivate learners who show low interest in school work? A mean of 4.474 was achieved in this question. The teacher trainees were therefore 89.48% certain that they would be able to motivate their learners to work harder once they started to teach full-time. The question in which the participants scored lowest was question 12 on learner creativity. It read: How much can you do to foster learner creativity? A mean of 3.793 was achieved in this question. The teacher trainees were therefore 75.86% certain that they could develop their learners' creativity. Even for a question in which a lowest score was achieved, this was quite high.

Table 3: Teaching Efficacy Beliefs of the participants before WIL (N= 136) and after WIL (N= 109).

Questions	Mean before WIL	Mean after WIL	Mean difference	SD before WIL	SD after WIL
Q1	3.881	3.783	0.098	0.993	0.884
Q2	4.326	4.142	0.184	0.854	0.822
Q3	4.378	4.252	0.126	0.854	0.904
Q4	4.474	4.333	0.141	0.905	0.840
Q5	4.170	4.126	0.044	0.966	0.776
Q6	4.459	4.340	0.119	0.689	0.767
Q7	3.970	4.104	-0.134	0.810	0.780
Q8	4.000	4.009	-0.009	0.914	0.775
Q9	4.341	4.321	0.02	0.774	0.698
Q10	4.230	3.943	0.287	0.897	0.826
Q11	4.133	4.190	-0.057	0.991	0.681
Q12	3.793	3.905	-0.112	1.037	0.779
Q13	4.296	4.250	0.046	0.856	0.833
Q14	4.459	4.086	0.373	0.655	0.810
Q15	4.170	4.179	-0.009	0.877	0.954
Q16	4.022	4.094	-0.072	0.902	0.799
Q17	4.015	4.087	-0.072	1.007	0.790
Q18	4.096	3.971	0.125	0.800	0.727
Q19	4.193	4.086	0.107	0.877	0.878
Q20	4.400	4.267	0.133	0.794	0.750
Q21	3.911	4.048	-0.137	0.966	0.896
Q22	3.815	3.886	-0.071	1.038	1.031
Q23	4.126	4.086	0.04	0.814	0.748
Q24	4.222	4.269	-0.047	0.870	0.700
Average	4.162	4.115	0.047	0.881	0.810

When considering the means after WIL, an average mean of 4.115 out of a possible 5, was obtained for all the questions. This was 0.047 lower than the average before WIL. Question four, on motivation, obtained a second highest average this time round at 4.333, while question six, on self-belief, which read: How much can you do to get students to believe they can do well in school work? obtained the highest mean at 4.340. After WIL these participants were therefore 86.80% certain that they would be able to get their students to believe that they were indeed able to perform well in their school work. It is interesting to note that, together with question 14 on improving the understanding of a failing learner, question six obtained the second highest mean of 4.459 before WIL. Questions four and six therefore seemed to have swapped positions with respect to the highest means, before and after WIL.

The question, in which participants scored lowest after WIL, was question one, on getting through to the most difficult learners. The participants scored 3.783 in this question. The participants scored third lowest in question 12 on learner creativity, with a mean of 3.905. This was the question in which the participants scored lowest before WIL. Another interesting observation is that the participants scored third lowest in question one, before WIL, with a mean of 3.881. Once again, it seems as if two questions swapped positions from before to after WIL. This time it was questions 12 and one, swapping around the lowest and third lowest positions, before and after WIL, respectively.

Before WIL, the lowest standard deviation of 0.655 was obtained in question 14, on the improvement of the content understanding of a learner who is failing. Recall that a mean of 4.459 was obtained in this question. The greatest standard deviation of 1.038 was obtained in question 22 on assisting families in helping their children do well in school, with a mean of 3.815. The high mean of 4.459 and relatively low standard deviation of 0.655 in question 14, mean that student trainees felt more comfortable with improving the content understanding of their learners than with assisting families in helping their children do well in school, as question 22 obtained a lower mean of 3.815 and a relatively higher standard deviation of 1.038.

After WIL, the lowest standard deviation of 0.681 was obtained in question 11, on the extent to which the participants would be able to construct good questions for the learners. A mean of 4.190 was obtained in this question. The greatest standard deviation of 1.031 was again obtained in question 22, just as before WIL. A corresponding mean of 3.886 was reached here. This data implies that although there were greater consensuses among the participants regarding their efficacy beliefs on the construction of good questions for their

learners after WIL, this was not the case when considering their beliefs on the assistance that they were able to provide families with helping their children do well in school. Participation in WIL clearly did not contribute to the improvement of the participants' efficacy beliefs in this regard.

Tables 4, 5 and 6 provide data on the teaching efficacy beliefs of the two groups of participants with respect to three constructs, namely student engagement, instructional strategies and classroom management. Data are also provided before and after WIL and was sourced from the responses of the participants to the same questionnaire as in the case above.

The eight questions indicated in Table 4 all addressed aspects concerning student engagement. When considering the participants' responses, one notices that in all but questions 12 and 22 the mean responses were lower after WIL than it was before WIL. This resulted in an average mean difference of 0.094. It can therefore be deduced that the teaching efficacy beliefs of the participants, with respect to student engagement, decreased slightly after doing WIL. When performing a paired t-test on these results, a two-tailed P value of 0.1259 was obtained and by conventional criteria, this difference is considered to be not statistically significant. A small difference in standard deviation of 0.039 was also observed.

Table 4: Teaching efficacy beliefs regarding student engagement before WIL (N = 136) and after WIL (N = 109).

Questions	Mean before WIL	Mean after WIL	SD before WIL	SD after WIL
Q1	3.881	3.783	0.993	0.884
Q2	4.326	4.142	0.854	0.822
Q4	4.474	4.333	0.905	0.840
Q6	4.459	4.340	0.689	0.767
Q9	4.341	4.321	0.774	0.698
Q12	3.793	3.905	1.037	0.779
Q14	4.459	4.086	0.655	0.810
Q22	3.815	3.886	1.038	1.031
Average	4.194	4.100	0.868	0.829

Table 5: Teaching efficacy beliefs regarding instructional strategies before WIL (N=136) and after WIL (N=109).

Questions	Mean before WIL	Mean after WIL	SD before WIL	SD after WIL
Q7	3.970	4.104	0.810	0.780
Q10	4.230	3.943	0.897	0.826
Q11	4.133	4.190	0.991	0.681
Q17	4.015	4.087	1.007	0.790
Q18	4.096	3.971	0.800	0.727
Q20	4.400	4.267	0.794	0.750
Q23	4.126	4.086	0.814	0.748
Q24	4.222	4.269	0.870	0.700
Average	4.149	4.115	0.873	0.750

The eight questions indicated in Table 5 all addressed aspects concerning instructional strategies. When considering the participants' responses, one notices that in four of the eight questions the mean responses were higher after WIL than it was before WIL. This was the case with questions seven, 11, 17 and 24. However, the average mean after WIL was still 0.034 lower than before WIL. It can therefore be deduced that the teaching efficacy beliefs of the participants, with respect to instructional strategies, decreased slightly after doing WIL. When performing a paired t-test on these results, a two-tailed P value of 0.5086 was obtained and by conventional criteria, this difference is considered to be not statistically significant. A small difference in standard deviation of 0.123 was also observed.

The eight questions indicated in Table 6 all addressed aspects concerning classroom management. When considering the participants' responses, one noticed that just as in the case of the instructional strategies construct, four of the eight questions had mean responses which were higher after WIL than they were before WIL. This was the case with questions eight, 15, 16 and 21. However, the average mean after WIL was still 0.012 lower than before WIL. It can therefore be deduced that the teaching efficacy beliefs of the participants, with respect to classroom management, decreased slightly after doing WIL. When performing a paired t-test on these results, a two-tailed P value of 0.7115

Table 6: Teaching efficacy beliefs regarding classroom management before WIL (N = 136) and after WIL (N = 109)

Questions	Mean before WIL	Mean after WIL	SD before WIL	SD after WIL
Q3	4.378	4.252	0.854	0.904
Q5	4.170	4.126	0.966	0.776
Q8	4.000	4.009	0.914	0.775
Q13	4.296	4.250	0.856	0.833
Q15	4.170	4.179	0.877	0.954
Q16	4.022	4.094	0.902	0.799
Q19	4.193	4.086	0.877	0.878
Q21	3.911	4.048	0.966	0.896
Average	4.143	4.131	0.902	0.852

was obtained and by conventional criteria, this difference is considered to be not statistically significant. A small difference in standard deviation of 0.050 was also observed.

Herewith a summary of the information provided in [Tables 4](#), [5](#) and [6](#).

Table 7: Summary of teaching efficacy beliefs of the participants before WIL (N= 136) and after WIL (N= 109).

Category	Mean before WIL	Mean after WIL	SD before WIL	SD after WIL
Student engagement	4.194	4.100	0.868	0.829
Instructional strategies	4.149	4.115	0.873	0.750
Classroom management	4.143	4.131	0.902	0.852
Overall Teaching Efficacy	4.162	4.115	0.881	0.810

Clearly, the teacher trainees' efficacy beliefs with regard to the three sub-scales do not differ much, and this is true both before and after WIL. The absolute difference in mean scores between Instructional strategies and Classroom management before WIL is a mere 0.006 and 0.016 after WIL. The absolute difference in mean scores between Instructional strategies and Student engagement is 0.045 before WIL and 0.015 after WIL. Last, the absolute difference in mean scores between Student engagement and Classroom management is 0.051 before WIL and 0.031 after WIL. The greatest difference in means between two sub-scales is a difference of 1.216% between Student engagement and Classroom management measured before WIL, while the smallest difference in means between two sub-scales is a mere 0.145% between Instructional strategies and Classroom management, also measured before WIL. The standard deviations of the three sub-scales show similar patterns with very small differences. These results are consistent with those of the pilot study (Matoti et al., 2011). This implies that exposure to the real demands of school contexts did have an impact, be it small, on the student teachers' teaching efficacy beliefs.

Conclusion

This article reported on part two of a study into the self-efficacy beliefs of teacher trainees studying in the School of Teacher Education at a University of Technology, in the Free State Province of South Africa. A questionnaire was administered to the participants before and after a six month period of work-integrated learning to determine the impact of WIL on their self-efficacy beliefs with regard to teaching at this stage of their careers. The students responded with overwhelming positive self-efficacy beliefs before WIL and while their beliefs did show a slight decrease after WIL, it was so small that it could not be seen as statistically significant. The researchers must therefore conclude that, however important work-integrated learning might be in the training of teachers, prospective teachers' self-efficacy beliefs with regard to teaching are shaped by much more than only their experiences during Teaching Practice.

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